



United States  
Department of  
Agriculture

Forest  
Service

Peaks  
Ranger District

5075 N. Highway 89  
Flagstaff, AZ 86004-2852  
Phone: (928) 526-0866  
Fax: (928) 527-8288

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File Code: 2230

Date: 7/16/04

Manterola Sheep Company, Inc.  
c/o Joe Manterola  
P O Box 11227  
Casa Grande, AZ 85230

Dear Joe:

These are your 2004 Annual Operating Instructions (AOI) for the Mooney Mountain Allotment, Woody Mountain Allotment, A-1 Mountain Allotment, Mud-Tinny Allotment (leafy spurge) and Beaverhead-Griefhill Driveway. Changes were made in the grazing schedule. These Annual Instructions are a part of your term grazing permit as indicated in Part Two. In addition, this letter is to document actions that need to be taken this year to keep the Forest Service and these allotments in compliance with previous commitments from environmental assessments, allotment management plans and guidelines and recommendations for rare wildlife and plant species, including those that are threatened or endangered.

#### **Mooney Mountain Allotment**

The Mooney Mountain Allotment consists of 20,833 acres west of Flagstaff, Arizona. These acres lie within the Peaks Ranger District of the Coconino National Forest. The allotment lies on the western edge of the Coconino Forest Boundary between Camp Navajo and the Mogollon Rim. The sheep, which graze the Mooney Mountain Allotment, spend approximately 40% of the season grazing upon two allotments Garland Prairie, and Pomeroy, on the Williams Ranger District of the Kaibab National Forest. The grazing system is a seven unit deferred rest rotation system.

The majority of the allotment is a ponderosa pine community at an elevation of approximately 7000'. Within the ponderosa pine community lays scattered pockets of mountain meadows, aspen, and riparian community types. Springs on the allotment are: Railroad, Poison, Volunteer, and Upper Garland, which have some riparian vegetation.

The allotment contains the following Land Management Plan Management Areas:

- MA 3-Ponderosa Pine and Mixed Conifer
- MA 4-Ponderosa Pine on greater than 40%
- MA 5-Aspen
- MA 6-Unsuitable Timber Land
- MA 7-Pinyon-Juniper, Less Than 40% Slope
- MA 9-Mountain Grassland
- MA 12-Riparian

The Mooney Allotment occurs in two 5th code watersheds. The following table is a summary of number of total acres within each 5th code watershed and acres of the allotment, which occur within each watershed.

5 <sup>th</sup> Code Watershed (Acres)	Allotment (Acres)	% of Allotment Within Watershed
Sycamore Canyon (103,894)	16,993	17
Oak Creek Canyon (298,114)	374	1

The following is a list of Best Management Practices (BMP's) developed in the 1995 Mooney Mountain Allotment Environmental Assessment.

- Monitor and enforce permittee compliance: assure the permittee complies with the conditions of the permit concerning bed grounds, water stops and time in each area.
- Manage livestock grazing within (TES unit 55) meadows and riparian areas at intensity that will improve vegetation ground cover (primarily the litter component) and improve species diversity of perennial grasses.
- Rotate livestock through two camp units on the Mooney Mountain Allotment, in conjunction with the Garland and Pomeroy grazing allotments on the Kaibab National Forest, which are deferred and grazed in a planned sequence. Graze periods allow for adequate recovery of perennial plants during the growing season which is estimated at 150 days each year. Time of year when each unit is grazed changes from year to year.
- Do not allow livestock to bed down in sensitive meadows or other sensitive areas such as riparian areas, waters, rocky drainages, spotted owl cores, and goshawk post-fledgling areas.

Your term grazing permit information along with your 2004 grazing schedule is listed below for this allotment:

<u>Permittee Name</u>	<u>Permit Type</u>	<u>Season</u>	<u>Permitted No.</u>
Manterola Sheep Company, Inc.	Term	6/1-10/15	1840 sheep
	State and Private		<u>400</u>
		Total	2240

<u>Pasture Name</u>	<u>Use Dates</u>	<u>Total Number</u>
Pomeroy	6/1-6/15	1392
Grey	6/16-6/30	1392
West Mooney	7/1-8/15	1392
East Mooney	8/16-9/30	1392
Judy	10/1-10/5	1392
Pacchuco	10/6-10/10	1392
Montoya	10/11-10/15	1392
Airport	Yearlong Rest	

#### **Woody Mountain Allotment Area Description**

The Woody Mountain Allotment consists of 10,725 acres southwest of Flagstaff, Arizona. These acres lie within the Peaks Ranger District of the Coconino National Forest. The allotment runs southeast of Rogers Lake to Interstate Highway 17. The grazing system is a six unit deferred rest rotation system.

The Woody Mountain band of sheep are grazed upon a state lease referred to as Budweiser Tanks. This area is Arizona State Trust Land and Manterola Sheep Co. has the grazing lease for the area. This band will also utilize the Black Springs Allotment, which was one of several allotments, which

were purchased and consolidated in order to form the Windmill Allotment. The Windmill permittee did not wish to utilize the allotment due to its size, and separation from the rest of the Windmill Allotment.

The majority of the allotment is a ponderosa pine community at an elevation of approximately 7000'. Within the ponderosa pine community lays scattered pockets of mountain meadows, aspen, and riparian community types. No riparian areas within the allotment are accessible to sheep.

The allotment contains the following Land Management Plan Management Areas:

- MA 3-Ponderosa Pine and Mixed Conifer
- MA 4-Ponderosa Pine on greater than 40%
- MA 5-Aspen
- MA 6-Unsuitable Timber Land
- MA 9-Mountain Grassland
- MA 12-Riparian

The Woody Allotment occurs in three 5th code watersheds. The following table is a summary of number of total acres within each 5th code watershed and acres of the allotment, which occur within each watershed.

5 <sup>th</sup> Code Watershed (Acres)	Allotment (Acres)	% of Allotment Within Watershed
Sycamore Canyon (103,894)	1,356	1
Oak Creek Canyon (298,114)	3,950	1
Flagstaff (145,414)	4,407	1

The following is a list of Best Management Practices (BMP's) developed in the 1995 Woody Mountain Allotment Environmental Assessment.

- Monitor and enforce permittee compliance: assure the permittee complies with the conditions of the permit concerning bed grounds, water stops and time in each area.
- Manage livestock grazing within (TES unit 55) meadows at intensity that will improve vegetation ground cover (primarily the litter component) and improve species diversity of perennial grasses.
- Rotate livestock through five camp units, which are deferred and grazed in a planned sequence. Graze periods allow for adequate recovery of perennial plants during the growing season which is estimated at 150 days each year. Time of year when each unit is grazed changes from year to year.
- Do not allow livestock to bed down in sensitive meadows or other sensitive areas.

Your term grazing permit information along with your 2004 grazing schedule is listed below for this allotment:

<u>Permittee Name</u>	<u>Permit Type</u>	<u>Season</u>	<u>Permitted No.</u>
Manterola Sheep	Term	6/1-10/15	830 sheep
Company, Inc.	State and Private		815
		Total	1645
	Term		8 burros

<b><u>Pasture Name</u></b>	<b><u>Use Dates</u></b>	<b><u>Total Number</u></b>
Tule	6/1-6/9	830
Garden Springs	6/10-6/18	830
Black Tank	6/19-6/27	830
Aspen Springs	6/28-7/13	830
Fry	7/14-7/24	830
A-1 Mountain	7/25-9/22	830
Budweiser Allot	9/23-9/25	830
Black Spg. Allot	9/26-9/28	830
Tule	9/29-10/1	830
Garden Springs	10/2-10/4	830
Black Tank	10/5-10/7	830
Aspen Springs	10/8-10/10	830
Fry	10/11-10/13	830
Budweiser Allot	10/14-10/15	830

### **A-1 Mountain Allotment Area Description**

The A-1 Mountain Allotment consists of 7,980 acres, and lies within the Peaks Ranger District of the Coconino National Forest and includes some Arizona state trust land. The allotment is located just north of Interstate Highway 40, adjoining the western edge of the city of Flagstaff, Arizona. Of the 7,980 acres, there are 2,750 acres of State Trust Land. Present management of the allotment is a six pasture deferred rotation grazing system.

The area mainly consists of ponderosa pine/bunchgrass community. Within this community type the effects of a 1950's A-1 burn exist. This area is now dominated by perennial grass species and ponderosa pine regeneration. Aspen stands are found on the side of A-1 Mountain, and mountain grassland is found at Babbitt tank. A-1 Lake may have been an ephemeral riparian area at one time but is now a stock tank with tall mounds of soil.

The allotment contains the following Land Management Plan Management Areas:

- MA 3-Ponderosa Pine and Mixed Conifer
- MA 4-Ponderosa Pine on greater than 40% slope
- MA 5-Aspen
- MA 6-Unsuitable Timber Land
- MA 9-Mountain Grassland

The A-1 Mountain Allotment occurs in two 5th code watersheds. The following table is a summary of number of total acres within each 5th code watershed and acres of the allotment, which occur within each watershed on the Coconino National Forest.

5 <sup>th</sup> Code Watershed (Acres)	Allotment (Acres)	% of Allotment within Watershed
Sycamore Canyon (103,894)	160	5

Flagstaff (145,396)	7,800	1
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The following is a list of Best Management Practices (BMP's) developed in the 1995 A-1 Mountain Allotment Environmental Assessment.

- One of the main goals for livestock grazing practices on this allotment is to maintain or improve the quality of water.
- The location, timing, and intensity of livestock grazing activities should be controlled with objectives of achieving soil cover to prevent accelerated erosion and to protect water quality.
- Structural range improvements, such as fences, water developments, trails and corrals, should be planned, constructed and utilized in a manner to enhance or maintain water quality.
- Land treatments to manage vegetation or practices to reduce erosion should be planned, implemented and maintained to minimize adverse impacts on water quality.
- Livestock management activities, such as parasite control, feeding and salting, should be done in a manner to protect water quality.
- Monitor and enforce permittee compliance with terms and conditions of the grazing permit.

Your temporary grazing permit information along with your 2004 grazing schedule is listed below:

<u>Permittee Name</u>	<u>Permit Type</u>	<u>Season</u>	<u>Permitted No.</u>
Manterola Sheep Co	Temporary	7/25-9/22	830 sheep
	State and Private		<u>815</u>
		Total	1645

<u>Pasture Name</u>	<u>Use Dates</u>	<u>Total Number</u>
Fort Valley, A-1 Mountain, Fuller, Iris, Belle,	7/25-9/22	830 sheep FS
South Flag		815 sheep State

#### **Mud-Tinny Allotment Area Description**

The Mud-Tinny Allotment consists of 75,885 acres southeast of Flagstaff, Arizona. These acres lie within Mormon Lake Ranger District of the Coconino National Forest. The allotment lies from Mormon Lake in the east, south to the Mormon Lake District boundary, west to Bert Lee Park, and north to Howard Draw. The grazing system is a nine pasture deferred rest rotation system.

The majority of the allotment is a ponderosa pine community at an elevation of approximately 7000'. Within the ponderosa pine community lays scattered pockets of mountain meadows, aspen, and riparian community types. Mormon Lake is the only natural wetland within the allotment. Springs on the allotment are: Hoxworth, Wallace, Tinny, Mud, Mayflower, Sedge, Iowa Camp, Van Deren, Thomas, Tree, Mint, and Navajo all of which has some riparian vegetation. Hoxworth Spring was excluded from cattle grazing in the spring of 2000.

The allotment contains the following Land Management Plan Management Areas:

- MA 3-Ponderosa Pine and Mixed Conifer
- MA 4-Ponderosa Pine on greater than 40%
- MA 5-Aspen
- MA 6-Unsuitable Timber Land
- MA 9-Mountain Grassland
- MA 12-Riparian

The Mud/Tinny Allotment occurs in five 5th code watersheds on the Coconino National Forest. The following table is a summary of number of total acres within each 5th code watershed and acres of the allotment, which occur within each watershed.

5 <sup>th</sup> Code Watershed (Acres)	Allotment (Acres)	% of Allotment Within Watershed
Dry Beaver Creek (127,043)	19,000	15
Oak Creek Canyon (298,114)	7,600	3
Lake Mary (97,203)	19,000	20
Canyon Diablo (223,885)	7,600	3
Mormon Lake (25,385)	22,800	90

The following is a list of Best Management Practices (BMP's) developed for this annual operating plan.

- One of the main goals for livestock grazing practices on this allotment is to maintain or improve the quality of water.
- The location, timing, and intensity of livestock grazing activities should be controlled with objectives of achieving soil cover to prevent accelerated erosion and to protect water quality.
- Structural range improvements, such as fences, water developments, trails and corrals, should be planned, constructed and utilized in a manner to enhance or maintain water quality.
- Land treatments to manage vegetation or practices to reduce erosion should be planned, implemented and maintained to minimize adverse impacts on water quality.
- Livestock management activities, such as parasite control, feeding and salting, should be done in a manner to protect water quality.
- Monitor and enforce permittee compliance with terms and conditions of the grazing permit.
- Manage livestock grazing within (TES unit 55) meadows and riparian areas at an intensity that will improve vegetation ground cover (primarily the litter component) and improve species diversity of perennial grasses.

Your term grazing permit information along with your 2004 grazing schedule is listed below for leafy spurge control:

<u>Permittee Name</u>	<u>Permit Type</u>	<u>Season</u>	<u>Permitted No.</u>
Manterola Sheep Co	Temporary	5/1-10/15	1000 sheep

<u>Pasture Name</u>	<u>Use Dates</u>	<u>Total Number</u>
Brolliar, Fulton, South Mormon Mtn, Gash Flat	5/1-10/15	1000 sheep

#### **Beaverhead-Griefhill Driveway Area Description**

The Beaverhead-Griefhill Driveway consists of 44,800 acres on three National Forests (Prescott, Coconino, and Kaibab). The Driveway starts at Badger Springs and crosses AZ State land and

Bureau of Land Management (BLM) land before reaching the Prescott National Forest. The Driveway crosses from the Prescott National Forest to the Coconino National Forest at Thousand Trails Resort along the Verde River. It continues to the northeast approximately to the Coconino/Yavapai County line, then heads north towards Flagstaff. Just south of Kachina Village the Driveway turns northwest towards the southwest corner of Camp Navajo and then enters the Kaibab National Forest. The Driveway on the Prescott and Coconino National Forests is approximately 70 miles long and averages one mile in width. Both the Mooney Mountain and Woody Mountain bands of sheep are permitted to graze this driveway in May each year.

The Driveway includes several vegetative community types from the upper Sonoran desert shrub to ponderosa pine, and passes through semi-desert grassland, chaparral, pinyon-juniper, riparian, and mountain meadows. The topography of the area ranges from flat grasslands to very steep, rocky slopes.

The driveway contains the following Land Management Plan Management Areas:

- MA 2-Verde Wild and Scenic River
- MA 3-Ponderosa Pine and Mixed Conifer
- MA 4-Ponderosa Pine on greater than 40%
- MA 5-Aspen
- MA 6-Unsuitable Timber Land
- MA 7-Pinyon Juniper on less than 40% slopes
- MA 8-Pinyon Juniper on greater than 40% slopes
- MA 9-Mountain Grassland
- MA 10-Transition Grassland
- MA 11-Verde Valley
- MA 12-Riparian

The Driveway occurs in four 5th code watersheds on the Coconino National Forest and two 5th code watersheds on the Prescott National Forest. The following table is a summary of number of total acres within each 5th code watershed and acres of the driveway that occur within each watershed.

5 <sup>th</sup> Code Watershed (Acres)	Allotment (Acres)	% of Allotment Within Watershed
Sycamore Canyon (103,894)	1,356	1
Oak Creek Canyon (298,114)	3,950	1
Dry Beaver (127,043)	16,210	13
Camp Verde (42,105)	797	2
Camp Verde (140,000)*	5,400	4
Agua Fria (191,000)*	9,100	5

- Prescott National Forest

The following is a list of Best Management Practices (BMP's) developed in the 1995 Beaverhead-Grief Hill Driveway Environmental Assessment.

- One of the main goals for livestock grazing practices on this driveway is to maintain or improve the quality of water.
- The location, timing, and intensity of livestock grazing activities should be controlled with objectives of achieving soil cover to prevent accelerated erosion and to protect water quality.

- Structural range improvements, such as fences, water developments, trails and corrals, should be planned, constructed and utilized in a manner to enhance or maintain water quality.
- Land treatments to manage vegetation or practices to reduce erosion should be planned, implemented and maintained to minimize adverse impacts on water quality.
- Livestock management activities, such as parasite control, feeding and salting, should be done in a manner to protect water quality.
- Monitor and enforce permittee compliance with terms and conditions of the grazing permit.
- Conduct annual range inspections: annual range inspections will be conducted by Forest Service personnel to see that livestock use of the Driveway does not exceed the allowable numbers, season of use and length of time livestock use the Driveway.
- Do not allow sheep to bed along the Verde River, Dry Beaver Creek or other riparian areas, or within meadows.

Your term grazing permit information along with your 2004 grazing schedule is listed below for this allotment:

<u>Permittee Name</u>	<u>Permit Type</u>	<u>Season</u>	<u>Permitted No.</u>
Manterola Sheep	Term	5/1-5/31	2670 sheep
Company, Inc.	State		<u>1215</u>
		Total	3885
	Term		14 burros

The pasture move dates shown above are an estimate, and may need to be changed on the basis of actual range conditions. Due to the current drought conditions it is vital to monitor actual conditions closely, and notify the Forest Service promptly if it appears that livestock will need to be moved sooner or later than estimated above. Grazing dates will be adjusted for this year's soil and vegetation readiness. Field checks in key forage areas such as meadows and riparian areas will be made prior to scheduled entry dates. Dates may be adjusted only with prior approval of the Forest Officer.

To facilitate livestock moves, gates may be opened two days prior to the scheduled move date only when moving into an adjacent pasture. Gates must be closed and grazed pasture entirely cleaned of livestock no later than five days following the scheduled move date. Grazed pastures must be kept clean of livestock following the pasture move.

Salt or mineral supplement locations should be rotated annually and avoid areas where sheep concentrations could cause excessive vegetation trampling, soil loss or disturbance to sensitive species or habitats. These areas would include habitats that support Mexican spotted owls, northern goshawks, rare plants, riparian vegetation, meadows or locations closer than 1/4 mile from a water source. The enclosed maps show the general location of these areas that are not obvious on the ground. These maps do not include all obvious sensitive areas like all meadows, riparian areas or water sources.

No prairie dog control (i.e., poisoning or shooting) is allowed in association with this permit.

Refer to the attached map for the areas that are excluded from sheep grazing during this grazing season. All fences must be maintained to ensure sheep stay out of these areas. You must monitor these areas to ensure sheep do not enter them. If sheep enter these sites immediate action must be taken to remove them (there are no excluded areas on any of these allotments presently).



Monitoring will be conducted in partnership with the permittee on a regular basis during the grazing season and will be used to develop next years Annual Operating Instructions that states when livestock are to be moved and how grazing patterns are to be changed during the grazing season. It is important this year for you to help us with monitoring of your grazing permit. With present and future downsizing in the Forest range program your assistance in monitoring will become increasingly more important. This monitoring generally includes compliance with your AIO's, livestock utilization and overall range condition and trends.

Utilization monitoring will be conducted throughout the year in every livestock grazed pasture following the protocol set up in the attached worksheet. In addition, key site and key species monitoring, to further conform to the Coconino Forest Plan, will be conducted at the following sites on the allotments:

**Coconino National Forest - Mooney Mountain Pastures**

<u>Management Area</u>	<u>Pasture</u>	<u>Location</u>	<u>Key Species</u>
ponderosa pine/oak	East	Volunteer Canyon	squirreltail, blue grama, Agsm

**Coconino National Forest - Woody Mountain Pastures**

<u>Management Area</u>	<u>Pasture</u>	<u>Location</u>	<u>Key Species</u>
ponderosa pine/oak	Woody Mtn	Le Barron Hill	squirreltail, Mtn. muhly, blue

**Kaibab National Forest- Garland Prairie**

**Location**

½ mile South of Indian Tank, ½ mile West of Morgan Tank, ½ mile North of Double Tanks

The allowable level of utilization on herbaceous and woody vegetation is 35% on the Coconino National Forest pastures and 40% on the Kaibab National Forest pastures. Livestock utilization of woody vegetation in riparian areas may not exceed 20%. This will ensure proper protection and management of resources on these allotments and the driveway.

Adjustments in numbers, rotation schedule or season of use will be made if allowable use standards are exceeded. The option to return livestock to a pasture that has received adequate plant regrowth will be considered if all resource objections can be met. To achieve the desired allowable use, it is important to have proper livestock distribution.

No new range improvements are scheduled for this year on these allotments or the driveway.

Refer to the attached map for the areas that are excluded from sheep grazing during the 2003 grazing season. All fences must be maintained to ensure sheep stay out of these areas. You must monitor these areas to ensure sheep do not enter them. If sheep enter these sites immediate action must be taken to remove them.

AOI's are appealable and subject to review under 36 CFR 251.

If you have any questions please call Matt Atencio, Katherine Sanchez or Mike Hannemann at 526-0866, or Paul Webber and Gary Hayes at 635-5621.

Sincerely,

*/s/ Heather Provencio for Gene Waldrip*

7/19/04

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Gene Waldrip  
Peaks District Ranger

Date

I have reviewed and agree with these annual operating instructions.

*/s/ Joe Manterola*

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Joe Manterola

## Planned Monitoring

Monitoring on this allotment over this year and up to the next 10 years will include: compliance, allotment inspections, range readiness, forage production, rangeland utilization, condition and trend, soil and riparian condition, and threatened and endangered species habitat.

**Compliance:** Throughout each grazing season compliance monitoring will be done by Forest Service personnel to determine accomplishment of the terms and conditions of this permit, Allotment Management Plan, and Annual Operating Instructions.

**Allotment Inspections:** Allotment inspections are a written summary done each fall by Forest Service personnel to document compliance monitoring and to provide an overall history of that year's grazing. This document may include weather history, the year's success, problems, improvement suggestions for the future, and monitoring summary.

**Range Readiness:** Each spring, Forest Service personnel will assess range readiness prior livestock coming on the allotment to determine if vegetative conditions are ready for livestock grazing. The range is generally ready for grazing when cool season grasses are leafed out, forbs are in bloom, and brush and aspen are leafed out. These characteristics indicate the growing season has progressed far enough so grazing will not seriously impact these forage plants.

**Forage Production:** Forage production surveys for the allotment will be done every nine to 13 years. Methods used for these surveys will be done by the best available methods at that time. These values will be used as tools to manage this allotment, but will not be the sole measure to set carrying capacity.

**Rangeland Utilization:** Utilization monitoring is a estimate of the available forage by weight consumed or trampled through grazing and is expressed as a percent of the current year's biomass removed. Utilization monitoring is designed to assess key forage utilization levels by livestock and elk during the year and from year to year.

Key forage species for this allotment include western wheatgrass, blue grama, squirreltail, Mountain muhly, and Arizona fescue. Utilization monitoring will be conducted by the permittee and spot checked by Forest Service personnel throughout the year in every grazed pasture. This monitoring will calculate an overall utilization value for a pasture 1) before livestock go into a pasture, 2) within five days after livestock leave a pasture, and 3) at the end of the growing season in the fall. Utilization will be averaged into the following five categories: no-use (0-10%), light (11-20%), moderate (21-50%), high (51-70%) and extreme (71%+). The goal for utilization will be 35% or less by livestock throughout the year with this intensive livestock grazing system.

In addition, key site and key species monitoring will be conducted in each of following habitat types: pine (oak), riparian, mountain meadow, and aspen, if these habitat types are present on the allotment and are grazed by livestock. Utilization monitoring will also occur in selected pastures rested from livestock grazing by Forest Service personnel.

**Condition and Trend:** Watershed and vegetative condition and trend monitoring will help determine the effectiveness of the Allotment Management Plan and long-term range and watershed trend. In the past we have used Parker 3-step and paced transects to determine condition and trend. We now have better monitoring techniques such as canopy cover and frequency ground cover plots.

Parker 3-step and paced transect monitoring points were established throughout this allotment in the 1950-60's. These transects are one of best historic records of range condition and trend. The photo points and vegetative ground cover data show how the site has changed over time. The new plots will be placed with the Parker 3-step transects in most locations to add to this historic data. The original photo points will be retaken.

Ocular plant canopy cover 0.10 acre plots will be used to compare existing conditions with potential and desired vegetative community conditions. Over time, these plots will show how canopy cover changes. Canopy cover will provide an indication of how plants are growing, assuming that if they are getting bigger and occupying more space, then they are doing well and that can be a relative gauge of vigor.

Frequency and ground cover data will be collected using the widely accepted plant frequency method (University of Arizona, Extension Report 9043, 1997). These plots will monitor trends in plant species abundance, plant species distribution and ground cover. All this information will be statistically valid. This will provide information on plant composition and additional information on regeneration.

These transects will be read at least every 10 years by Forest Service personnel. These plots will be used to help determine the effectiveness of the current management.

**Precipitation:** Precipitation is currently recorded within or near this allotment at Flagstaff National Weather Service Office at Bellemont, Flagstaff Airport, Sedona Airport and all the active fire lookout towers on the Forest. We suggest that additional rain gauges be established at your headquarters or other convenient location for a more accurate record of your local precipitation. This data could be recorded throughout the year and summarized in the annual inspection.

**Soil and Riparian Condition:** The Intergovernmental Agreement between the Forest Service and the State of Arizona that controls water quality and the Clean Water Act requires implementation and effectiveness monitoring. The objectives of monitoring are to: 1) collect data sufficient to assist line officers and resource managers in evaluating effects of management activities on soil and water resources; 2) support changes in management activities to protect soil and water quality. Monitoring will help determine how successfully managers are implementing Guidance Practices and how effectively those practices are protecting soil and water quality. Arizona Department of Water Quality (ADEQ) will continue to monitor water quality in the area.

Evaluating watershed condition can be assessed using information from the monitoring schemes above. Monitoring of plant abundance, ground cover, species diversity and estimates of overall soil condition (using the methods throughout this monitoring section) will indicate whether or not management practices are effectively meeting management goals. Trends toward improvements in species abundance and diversity should indicate that management

practices are effectively improving soil condition and by inference, maintaining or improving downstream water quality and complying with water quality standards. Conversely, decreases in plant abundance and species diversity may indicate that management practices are not effective and need to be changed. Environmental factors, especially precipitation, will be considered when evaluating monitoring results.

Improving trends for riparian vegetation and stream channel conditions (if applicable on this allotment) should indicate that management practices are effectively benefiting water quality. Conversely, decreases in riparian vegetation or channel condition indicate that management practices are not effective and need to be changed. Environmental factors, especially flooding, will be considered when interpreting monitoring results. Several Fixed Station, Biocriteria Program, and other water quality monitoring sites maybe located within or near the allotment. These sites have and are being used to track long-term conditions and trends at critical points in a watershed and to develop biological criteria for stream segments. Information from these sites will be considered in evaluating the effectiveness of management practices, but may be of limited value considering the multitude of influences affecting each monitoring site.

**Rationale:** This monitoring program gives this alternative the best data possible to monitor the effectiveness of your Allotment Management Plan while staying within the projected Forest Service budget.